CLAIMS

Sub C1

1. A method of enabling ~~user interaction~~ with computer software running in a computer system via:

an interface surface containing information relating to the computer software and including coded data indicative of a drawing field; and

a sensing device which, when placed in an operative position relative to the interface surface, senses indicating data indicative of the drawing field and generates movement data indicative of the sensing device's movement relative to the interface surface;

the method including the steps of, in the computer system:

(a) receiving the indicating data from the sensing device;

(b) receiving the movement data from the sensing device;

(c) identifying the drawing field from the indicating data; and

(d) operating the computer software at least partly in reliance on the movement data, and in accordance with instructions associated with the drawing field.

2. A method according to claim 1, the method further including the steps of, in the computer system, associating the movement data with the drawing field.

3. A method according to claim 1, including the step of sending, in the computer system, data to the computer software indicative of at least the drawing field.

4. A method according to claim 2, wherein the drawing field is associated with a visible drawing zone defined on the interface surface.

5. A ~~method according to~~ claim 1, wherein the coded data includes at least one

tag, each tag being indicative of the drawing field.

6. A method according to claim 5, wherein the tags are also indicative of points within the drawing field.

7. A method according to claim 6, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the drawing field.

8. A method according to claim 7, wherein the relative position is defined in relation to the drawing field.

9. ~~A method of enabling user interaction~~ with computer software running in a computer system via:

an interface surface containing information relating to the computer software and including coded data indicative an identity of the interface surface; and

a sensing device which, when placed in an operative position relative to the interface surface, senses indicating data indicative of the identity of the interface surface and generates movement data indicative of the sensing device's movement relative to the interface surface;

the method including the steps of, in the computer system:

(a) receiving the indicating data from the sensing device;

(b) receiving the movement data from the sensing device;

(c) performing written gesture recognition in relation to at least some of the movement data; and

(d) in the event that a written gesture is recognised, operating the computer system in accordance with instructions associated with the written gesture and the interface

surface.

10. A method according to claim 9, wherein the selection gesture includes circumscribing or underlining at least some of the information.

11. A method according to any one of the preceding claims, wherein the sensing device includes at least one acceleration measuring device for measuring acceleration of the sensing device as it is used to draw the hand-drawn user input onto the surface, the movement data being generated by periodically sampling the acceleration of the sensing device as it is used to draw the hand-drawn user input onto the surface.

12. A method according to claim 11, further including the step of generating movement data in the form of a locus of the sensing device in relation to the surface, the locus being determined by ascertaining relative displacement of the sensing device.

13. A method according to claim 12, wherein the relative displacement is obtained by doubly integrating the acceleration with respect to time.

14. A method according to claim 12 or 13, wherein the acceleration measuring device includes one or more accelerometers configured to measure at least two orthogonal components of acceleration.

15. A method according to any one of claims 1 to 10, wherein position elements are disposed on the interface surface, the sensing device being configured to periodically sense position elements as it is used to draw the hand-drawn user input onto the surface, the method including the step of generating the movement data in the form of a locus of the sensing device in relation to the surface by ascertaining relative displacement of the sensing device over time with respect to at least one of the position elements.

16. A method according to claim 15, wherein the position elements are disposed on the surface as a regular array of dots, lines or other formations.

17. A method according to claim 15, wherein the position elements are disposed on the surface stochastically.

18. A method according to any one of claim 1 to 10, wherein the movement data is generated by ascertaining relative movement of one or more motion sensing elements rotatably mounted to the sensing device for contact with the surface while the sensing device is used to draw the hand-drawn user input thereon.

19. A method according to claim 18, wherein the motion sensing elements include one or more rollerballs mounted for rotation within a constraining housing disposed substantially within the sensing device.

20. A method according to claim 19, wherein components of rotation of the rollerball, due to movement of the sensing device when drawing the hand-drawn user input onto the surface, are periodically measured.

21. A method according to claim 20, wherein the components of rotation of the rollerball due to movement of the sensing device by the user when drawing the hand-drawn user input onto the surface are measured by means of:

rollers disposed within the constraining housing for rotation, the rollers being configured to be driven by contact with the rotating rollerball; or

optical sensing of rotation of the rollerball with respect to the constraining housing.

22. A method according to claim 7, wherein the relative position is defined in relation to a plurality of the other tags.

23. A method according to claim 7, wherein the relative position is defined in relation to the interface surface.

24. A method according to claim 7, wherein the first identity data identifies stored information defining the relative position, the stored information not being stored on the interface surface.

25. A method according to claim 24, wherein the first identity data and the second identity data together identify stored information defining the relative position.

26. A method according to claim 9, wherein the coded data includes at least one tag, each tag being indicative of the drawing field.

27. A method according to claim 26, wherein the tags are also indicative of points of the interface surface.

28. A method according to claim 27, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the interface surface.

29. A system for enabling user interaction with computer software running in a computer system via:

an interface surface containing information relating to the computer software and including coded data indicative of a drawing field; and

a sensing device which, when placed in an operative position relative to the interface surface, senses indicating data indicative of the drawing field and generates movement data indicative of the sensing device's movement relative to the interface surface;

the computer system being configured to:

(a) receive the indicating data from the sensing device;

(b) receive the movement data from the sensing device;

(c) identify the drawing field from the indicating data; and

(d) operate the computer software at least partly in reliance on the movement data, and in accordance with instructions associated with the drawing field.

30. A system according to claim 29, the computer system further being configured to associate the movement data with the drawing field.

31. A system according to claim 29, the computer system being configured to send data to the computer software indicative of at least the drawing field.

32. A system according to claim 30, wherein the drawing field is associated with a visible drawing zone defined on the interface surface.

33. A system according to claim 29, wherein the coded data includes at least one tag, each tag being indicative of the drawing field.

34. A system according to claim 33, wherein the tags are also indicative of points within the drawing field.

35. A system according to claim 34, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the drawing field.

36. A system according to claim 35, wherein the relative position is defined in relation to the drawing field.

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37. ~~A system of enabling user interaction with computer software running in a~~ computer system via:

an interface surface containing information relating to the computer software and including coded data indicative an identity of the interface surface; and

a sensing device which, when placed in an operative position relative to the interface surface, senses indicating data indicative of the identity of the interface surface and generates movement data indicative of the sensing device's movement relative to the interface surface;

the computer system being configured to:

(a) receive the indicating data from the sensing device;

(b) receive the movement data from the sensing device;

(c) perform written gesture recognition in relation to at least some of the movement data; and

(d) in the event that a written gesture is recognised, operate the computer software in accordance with instructions associated with the written gesture and the interface surface.

38. A system according to claim 27, wherein the selection gesture includes circumscribing or underlining at least some of the information.

39. A system according to any one of claims 29 to 38, wherein the sensing device includes at least one acceleration measuring device for measuring acceleration of the

sensing device as it is used to draw the hand-drawn user input onto the surface, the movement data being generated by periodically sampling the acceleration of the sensing device as it is used to draw the hand-drawn user input onto the surface.

40. A system according to claim 39, further the computer system being configured to generating movement data in the form of a locus of the sensing device in relation to the surface, the locus being determined by ascertaining relative displacement of the sensing device.

41. A system according to claim 40, wherein the relative displacement is obtained by doubly integrating the acceleration with respect to time.

42. A system according to claim 40 or 41, wherein the acceleration measuring device includes one or more accelerometers configured to measure at least two orthogonal components of acceleration.

43. A system according to any one of claims 29 to 43, wherein position elements are disposed on the interface surface, the sensing device being configured to periodically sense position elements as it is used to draw the hand-drawn user input onto the surface, the system the computer system being configured to generating the movement data in the form of a locus of the sensing device in relation to the surface by ascertaining relative displacement of the sensing device over time with respect to at least one of the position elements.

44. A system according to claim 43, wherein the position elements are disposed on the surface as a regular array of dots, lines or other formations.

45. A system according to claim 43, wherein the position elements are disposed on the surface stochastically.

46. A system according to any one of claims 29 to 45, wherein the movement data is generated by ascertaining relative movement of one or more motion sensing elements rotatably mounted to the sensing device for contact with the surface while the sensing device is used to draw the hand-drawn user input thereon.

47. A system according to claim 46, wherein the motion sensing elements include one or more rollerballs mounted for rotation within a constraining housing disposed substantially within the sensing device.

48. A system according to claim 47, wherein components of rotation of the rollerball, due to movement of the sensing device when drawing the hand-drawn user input onto the surface, are periodically measured.

49. A system according to claim 48, wherein the components of rotation of the rollerball due to movement of the sensing device by the user when drawing the hand-drawn user input onto the surface are measured by means of:

rollers disposed within the constraining housing for rotation, the rollers being configured to be driven by contact with the rotating rollerball; or

optical sensing of rotation of the rollerball with respect to the constraining housing.

50. A system according to claim 35, wherein the relative position is defined in relation to a plurality of the other tags.

51. A system according to claim 35, wherein the relative position is defined in relation to the interface surface.

52. A system according to claim 35, wherein the first identity data identifies stored information defining the relative position, the stored information not being stored on the interface surface.

53. A system according to claim 52, wherein the first identity data and the second identity data together identify stored information defining the relative position.

54. A system according to claim 37, wherein the coded data includes at least one tag, each tag being indicative of the interface surface.

55. A system according to claim 54, wherein the tags are also indicative of points on the interface surface.

56. A system according to claim 55, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the drawing field.

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